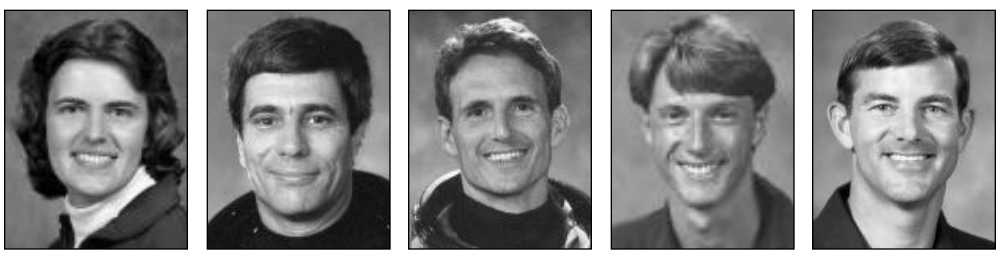
Foale, Voss join colleagues in Russia



Lucid Blaha Linenger Foale Voss

By Kyle Herring

Three-time shuttle veteran Mike Foale has joined fellow astronauts training at the Gagarin Cosmonaut Training Center in Star City, Russia, for stays on the Russian Mir Space Station.

Foale is the fifth and final astronaut scheduled to stay on Mir as part of the first phase of the International Space Station Program. Jim Voss will serve as Foale's backup.

Foale will train as the backup to Jerry Linenger, who will be the fourth astronaut to stay aboard Mir as part of the first phase leading toward development and construction of the International Space Station. Foale then will be the prime crew member for a subsequent Mir stay targeted for late 1996.

Shannon Lucid, the next astronaut to stay on Mir, will be launched on the third docking mission, STS-76, scheduled for March. She will return home following a five-month stay and be replaced by John Blaha on the STS-79 mission of *Atlantis*. Blaha will spend about four months on Mir as a prime crew member for the Mir-22/23 crews. The two veteran astronauts have been in Star City since February.

Linenger will replace Blaha on Mir, launching aboard *Atlantis* on STS-81 for a five month mission with the Mir- 23/24 crews. Foale will launch on STS-84 to replace Linenger and will spend about four months on the space station with the Mir 24/25 crews. Voss will serve as a backup crew member and is not scheduled for a long-duration stay on Mir.

"The current flight assignments reflect both prime and backup crew members for the docking missions to Mir," said Frank Culbertson, Acting Director, Phase 1 Program. "Each of these individuals is extremely talented and all are proven performers in space flight. Both the U.S. and Russian programs will benefit from their experience and their expertise as we continue with these cooperative missions."

The flight assignments for the five astronauts are: Mir 21/22, Shannon Lucid as prime and John Blaha as backup to be launched to Mir on STS-76 and return on STS-79. On the Mir 22/23 crew, John Blaha will be the prime and Jerry Linenger will be the backup. Blaha will be launched to Mir on STS-79 and return on STS-81. The Mir 23/24 will see Jerry Linenger as the prime astronaut for a stay on Mir with Mike Foale as his backup. Linenger will make his trip to the space outpost on STS-81 and return on STS-84. The final Phase 1 mission, Mir 24/25, will send Mike Foale to the Russian station with Jim Voss as his backup on STS-84 with a return on STS-86.

Scobee-Rodgers to discuss space contributions

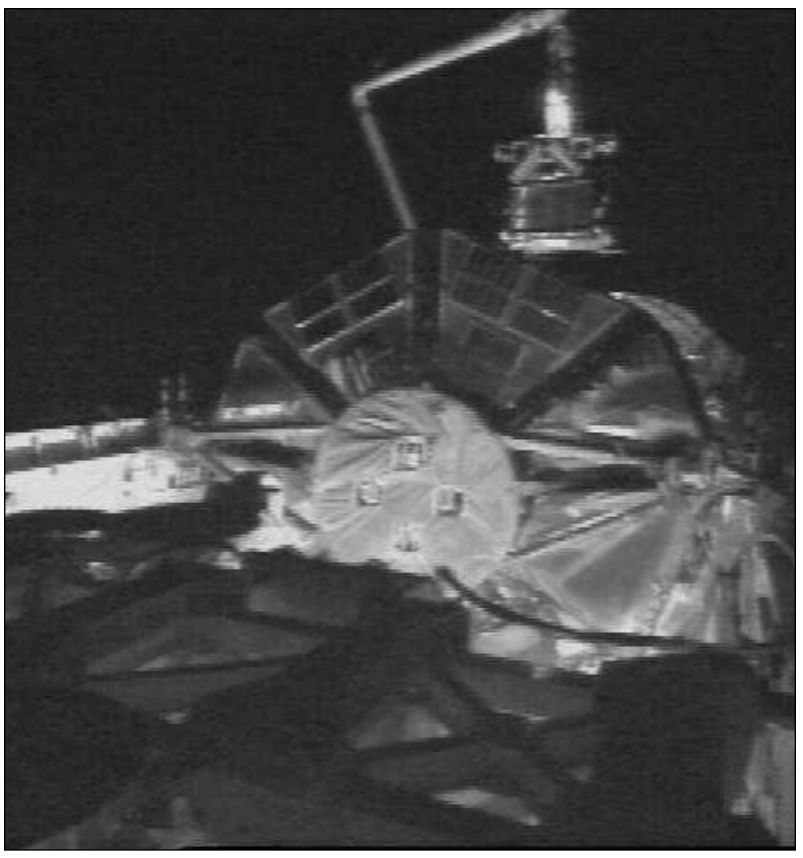
June Scobee Rodgers, founding chairman of the Challenger Center for Space Science Education, will discuss the importance of the space program and its contributions to science and technology at the Houston Engineering and Scientific Society later this month.

Scobee Rodgers, widow of the late Astronaut Dick Scobee, will speak on "Space Simulation, an Innovative Educational Approach Created by Private-Public Sector Initiatives" at 8 p.m. Jan. 30 at HESS, 3121 Buffalo Speedway.

At 7:30 p.m., before the speech, she will be available to sign copies of her new book, "Silver Linings."

The presentation is part of a year-long series of events called "Space Journey to the Future." Presented by HESS, the series is designed to allow the aerospace industry and other technical communities to share information about innovations and how they might benefit from technology transfer.

Reservations may be made by calling 627-2283; cost is $30 per person. For more information, call Michele Smith at 370-8338.



NASA Photo

Mission Specialist Koichi Wakata uses *Endeavour*'s robot arm to berth the 2,600-pound OAST-Flyer science satellite in the cargo bay. The satellite capture followed a textbook rendezvous performed by Commander Brian Duffy and Pilot Brent Jett, who guided the orbiter alongside the satellite through a series of maneuvering jet firings.

Marshall director retires; Littles to accept position

G. Porter Bridwell, director of Marshall Space Flight Center, last week announced plans to leave his position and retire from NASA by Feb. 3. NASA Administrator Daniel S. Goldin has named J. Wayne Littles the new center director.

Bridwell, 60, has been director of MSFC center since January of 1994. "I've been out here for 38 years, 34 of it with NASA," he told his senior staff this morning, "it's time to go."

"During his long career, Porter Bridwell has epitomized all the best qualities of federal service," said NASA Administrator Daniel S. Goldin. "And, as Marshall director over the last two years, he has paved the way in restructuring the center and defining its new role for the future."

Bridwell started his career as an aerospace industry engineer in 1958, joining NASA four years later. He served as an engineering manager on the Saturn program, headed the development of the space shuttle external tank, and managed all the space shuttle main propulsion systems while at Marshall. He also served as director of the Institutional and Program Support Directorate, and headed efforts to develop a new heavy-lift launch vehicle. In two NASA assignments away from Huntsville, he served as acting director of the Stennis Space Center, on the space station redesign team that handled initial integration of the Russian elements into the Space Station Program.

Littles, currently associate administrator for the Office of Space Flight, was named director Tuesday.

"Dr. Littles has the necessary managerial and technical experience to lead Marshall into the 21st century," Goldin said. "As the agency's center of excellence for space propulsion, I want Marshall to lead the world in research and development of next generation propulsion systems. Dr. Littles is uniquely qualified to provide the leadership necessary to meet that challenge."

As the head of the Office of Space Flight, Littles directed both the shuttle and station programs for NASA. During his tenure, NASA restructured the Space Station Program, streamlined the management of the program by putting it under a single prime contractor, and led discussions with the Russian Space Agency concerning their participation and contributions to the space station.

Pending selection of a replacement, Wilbur Trafton, who currently is director of the International Space Station Program, will be the acting associate administrator for the Office of Space Flight.

JSC expands engineering outreach efforts

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nating Public Affairs Office Education Team, describes the importance of JSC civil service and contractor employees volunteering for educational events: "It's exciting that our JSC Education Outreach volunteers directly reach so many local-area students with the National Engineers Week presentations. Our folks have unique real-life work experiences to share about the technology field. Capturing student's interest in technical careers is one of JSC's most significant contributions to our communities."

To reach more students in outlying areas of JSC, invitations were mailed for the first time to schools in the Houston, Aldine, Channelview, Humble, North Forest and Sheldon independent school districts. The schools surrounding JSC also received invitations. In response to those invitations, 400 teachers requested a volunteer visit.

To fill the demand for volunteer visits to area classrooms, additional volunteers are still needed. Because National Engineers Week is an approved educational event, JSC civil service employees may charge their time spent away from work to a special education labor code.

Resources such as hands-on activities, exhibits, videos and handout materials will be made available to volunteers. To further assist volunteers with their presentations, an orientation meeting is scheduled for Jan. 31 in the Teague Auditorium. A guest speaker from Clear Creek ISD will discuss teaching tips. Following the orientation, there will be demonstrations of hands-on activities for use in the classroom.

Beginning next week, volunteers who have signed-up for National Engineers Week will receive assignment letters containing the name and phone number of the teacher they will visit.

If you would like to volunteer for National Engineers Week or any other Education Outreach Program activity, or have additional questions, please call Mae Mangieri at x32929.

Thagard returns to home state

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STS-7 in 1983 and STS 51-B in 1985, both aboard *Challenger*; STS-30 in 1989 on *Atlantis*; STS-42 in 1992 on *Discovery*; and on the Mir-18 mission on the space station last year. On that flight, Thagard was launched with two cosmonauts aboard a Soyuz rocket and landed aboard *Atlantis* at the conclusion of the first shuttle/Mir docking mission.

Becoming an astronaut was one of Thagard's dreams. Another was to return to his alma mater, from which he received bachelor and master of science degrees in engineering science in 1965 and 1966, respectively. "The only thing other than being an astronaut was to come back to Florida State to teach," Thagard said. His doctor of medicine degree came in 1977 from the University of Texas Southwestern Medical School.

Thagard is a pilot and has logged more than 2,200 hours flying time, primarily in jet aircraft. With the completion of his fifth space mission, Thagard has spent over 140 days in space — more than any other American.

Astronauts test connectors, cables in two separate space walks

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Mission Specialists Leroy Chiao and Winston Scott tested connectors, cables and work platforms for almost seven hours in *Endeavour*'s cargo bay Tuesday night and Wednesday morning.

Chiao and Scott floated into the bay at 11:54 p.m. Tuesday as *Endeavour* passed over Africa. The space walk began about one hour late as the astronauts took longer than expected to don their suits. Chiao and Scott worked with utility boxes, slidewires and a portable work stanchion affixed to *Endeavour*'s robot arm to gather additional data on methods and procedures which may be incorporated in the techniques which will be used to assemble the station.

Flight controllers had to juggle space walk activities due to the delayed start and a drop in temperatures in the thruster fuel lines on the Japanese Space Flyer Unit satellite. Duffy maneuvered *Endeavour* to a warmer attitude, allowing SFU temperatures to increase. The maneuver slightly delayed one of the major tasks of the space walk—a test of how well Scott's space suit would offset the temperatures of space.

Late in the space walk, Scott climbed into foot restraints on the OAST-Flyer satellite platform for the thermal evaluation exercise. *Endeavour* was maneuvered to the coldest position possible, with its payload bay facing toward deep space and allowing temperatures to dip to about 104 degrees below zero at the point where Scott was positioned. The space walk concluded at 6:34 a.m. Wednesday, with the two astronauts logging 6 hours and 54 minutes in the vacuum of space.

Jett and Wakata worked alongside space walk coordinator Dan Barry on *Endeavour*'s aft flight deck, operating the ship's robot arm to move Chiao and Scott about the cargo bay in support of their various tasks.

As Chiao and Scott began their space walk, flight controllers repressurized *Endeavour*'s cabin to 14.7 pounds per square inch to help warm the shuttle and dislodge ice from the ship's flash evaporator system. The system is used to dissipate heat from the shuttle and its avionics in association with radiators mounted on the inside of the payload bay doors. Shortly after the astronauts completed their space walk, *Endeavour*'s flash evaporator system was successfully purged and resumed working at full capacity.

In the first space walk on Sunday night and Monday morning, Chiao and Barry spent six hours and nine minutes in *Endeavour*'s cargo bay. With Scott acting as the space walk coordinator from the aft flight deck, Chiao and Barry floated out of the airlock at 11:35 p.m. Sunday.

Chiao and Barry attached a portable work platform to the end of the robot arm, operated by Jett and Wakata. Jett used the arm to grapple various pieces of hardware designed to hold large modular components, mimicking the way equipment boxes and avionics gear will be moved back and forth in assembling the International Space Station.

Chiao and Barry unfolded a cable tray diagonally across the forward portion of the cargo bay housing electrical and fluid lines similar to those that will connect modules and nodes of the space station. The rigid umbilical was tested for its ease of handling and the ability of the astronauts to hook up lines to connectors.

While Chiao unraveled various lengths of cable, Barry spent time practicing the hookup of the cables in the rigid umbilical to connectors, testing his ability to manipulate tiny bolts and screws in weightlessness. He reported that most tasks could be accomplished with little difficulty. The astronauts concluded their space walk at 5:44 a.m. Monday.

The retrieval of two satellites went smoothly, even though the first satellite had two failed thrusters solar panels that would not latch properly.

Wakata extended *Endeavour*'s robot arm Tuesday to pluck the 2,600-pound OAST-Flyer science satellite out of orbit. The satellite was grappled at 3:47 a.m., following two days of free-flying investigations. The capture of the OAST-Flyer culminated a textbook rendezvous performed by Duffy and Jett, who guided *Endeavour* alongside through a series of maneuvering jet firings. The OAST-Flyer was deployed by Wakata at 5:32 a.m. Sunday.

The OAST-Flyer contained four experiments that studied spacecraft contamination, the use of the Global Positioning System for spacecraft attitude control, laser-initiated pyrotechnic devices in the environment of space, and an amateur radio experiment to allow radio operators on the ground to track the satellite.

On Saturday, Wakata had used *Endeavour*'s robot arm to retrieve the Japanese Space Flyer Unit satellite. The SFU was captured at 4:57 a.m. completing its 10-month scientific voyage which began with its launch on a Japanese rocket.

The retrieval followed the jettison of both of the SFU's solar arrays when the satellite's solar panels did not latch properly against the satellite after being retracted. The contingency procedure delayed the capture by about an hour and half.

NASA-JSC